

REMARKS/ARGUMENTS

A. General:

1. Claim 20 has been amended to incorporate claim 19 therein. Claim 24 has been amended to include language from claim 22 to provide more detail concerning the data analysis subsystem.

2. Claim 19 has been canceled.

3. Claims 1-18 and 20-24 remain in the application.

B. Information Disclosure Statement:

Applicants acknowledge with thanks the Examiner making the reference disclosed in the International Search Report of record in this case.

C. Objection to the Drawings:

The Examiner has objected to the drawings because they contain improper labels.

Applicants submit herewith six sheets of corrected drawings thereby obviating this objection.

D. 112 Rejection:

The Examiner has rejected claim 20 under 35 USC 112, second paragraph, for indefiniteness because of an apparent error in claim dependency.

Applicants have amended claim 20 by incorporating the language of claim 19 therein, thus, rewriting claim 20 to be independent and thereby obviating this rejection.

E. 102 Rejections:

1. The Examiner has rejected claims 1, 22, and 24 under 35 USC 102(e) as being anticipated by Turcott '733.

A goal of Applicants' invention is to identify systolic murmurs that are indicative of heart defects (see specification, paragraph [0021]). To accomplish this Applicants use systolic sub-intervals as recited in claims 1 and 22 and now in claim 24, as amended. The systolic interval begins after S1 and ends at S2.

Turcott, on the other hand, does not use systolic sub-intervals but rather measures the energy of heart sounds S1-S4 (see Fig. 10, number 84, and col. 17, lines 19-20). Turcott's method may be effective for finding major defects but it is not effective for finding murmurs which are what Applicants' invention can discern by using systolic sub-intervals. Therefore, Turcott cannot anticipate claims 1, 22, and 24, as amended.

2. The Examiner has rejected claim 19 under 35 USC 102(b) as being anticipated by Shaprio et al '792.

Applicants have canceled claim 19 thereby obviating this rejection.

3. The Examiner has rejected claim 1 under 35 USC 102(b) as being anticipated by Bredesen et al '969.

Bredesen et al. discloses using one heart cycle at each location his stethoscope is placed. Applicants' invention, on the other hand, uses the systolic sub-interval across a plurality of heart cycles as recited in claim 1. Therefore, Bredesen et al. cannot anticipate claim 1.

F. 103 Rejection:

The Examiner has rejected claims 2, 3, 6, 7, and 11 under 35 USC 103(a) as being unpatentable over Shapiro et al '792 in view of Bredesen et al '969.

As discussed above with regard to the Examiner's 102(b) rejection, Bredesen et al. only discloses using one heart cycle at each location whereas Applicants' invention as also recited in claim 2 uses multiple cycles. Shapiro et al. does not disclose thresholding as recited in claim 2, rather Shapiro et al. discloses generating graphical displays for interpretation by medical personnel. Base on these differences, Applicants submit that Bredesen et al. in combination with Shapiro et al. cannot render obvious claim 2, and therefore, claims 3, 6, 7, and 11 which depend therefrom.

G. Conclusion:

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In view of the above, Applicants submit that each of the presently pending claims in this application is in immediate condition for allowance. Reconsideration and withdrawal of the objection and rejections are requested. Claims 21 and 23 having been allowed, allowance of claims 1-18, 20, 22, and 24 at an early date is solicited.

Respectfully submitted,

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Enclosure: Six sheets of drawings containing Figs. 1-6.